

What is claimed is:

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1. In a communications system having a checkpoint server and a router, said router having a router server, a method for reconstructing separate but interrelated data comprising:
- 5 determining whether there has been a new connection having a corresponding base layer established through said router;
- if there is a new connection through said router, creating a unique connection identifier for said new connection; and
- storing said corresponding base layer with said unique connection identifier therein within said checkpoint server.
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2. The method of claim 1, further comprising the acts of:
- determining whether there has been a change of state for an existing connection running on said router;
- if there has been a change of state for an existing connection running on said
- 15 router, then checkpointing data corresponding to said existing connection to said checkpoint server with said unique connection identifier embedded therein.

3. The method of claim 1, further comprising the acts of:

determining whether there is data available within said checkpoint server for  
said firewall application; and

recovering said data by said firewall application from said checkpoint server if  
there is data available within said checkpoint server for said firewall  
application.

4. In a communications system having a checkpoint server a router and a firewall  
application, said router having a router server and at least one application module  
running therein, a method for reconstructing separate but interrelated data  
comprising:

determining whether there is data available within the checkpoint server; and  
recovering, by the firewall application and the at least one application module,  
said data from said checkpoint server if there is data available within said  
checkpoint server.

5. In a communications system having a checkpoint server, a router, and a firewall  
application having at least one connection therethrough, a method for uniquely  
checkpointing data comprising:

creating a unique connection identifier corresponding to each at least one  
connection through the router;

checkpointing data regarding said at least one connection through said router  
within said checkpoint server; and

5 encoding said checkpointing data within said checkpoint server with said  
corresponding unique connection identifier.

6. The method of claim 5, further comprising the acts of:

recovering said checkpointing data; and

reassembling said checkpointing data according to said unique connection  
10 identifier.

7. A communications system apparatus, having a router with connections running  
therethrough, the router further having a router server therein, said  
communications system comprising:

a firewall application device running within the router, said firewall application  
15 device responsive to connections made through said router; and

a checkpoint server device running within said router, said checkpoint server  
device responsive to said firewall application device,

said firewall application device configured to create a unique connection identifier in response to connections made through said router, and said firewall application device configured to checkpoint data associated with said connections with corresponding said unique connection identifier embedded therein to said checkpoint server.

8. The communications system apparatus of claim 7, wherein the firewall application device is further configured to recover said data from said checkpoint server and reassembling said data using said unique connection identifier embedded within said data.

9. A program storage device, tangibly embodying a program of instructions executable by a machine to perform a method for reconstructing separate but interrelated data, said method comprising:

determining whether there has been a new connection having a corresponding base layer established through said router;

if there is a new connection through said router, creating a unique connection identifier for said new connection; and

storing said corresponding base layer with said unique connection identifier therein within said checkpoint server.

10. The program storage device of claim 9, further comprising the acts of:

determining whether there has been a change of state for an existing connection running on said router;

if there has been a change of state for an existing connection running on said router, then checkpointing data corresponding to said existing connection to said checkpoint server with said unique connection identifier embedded therein.

11. The program storage device of claim 9, further comprising the acts of:

determining whether there is data available within said checkpoint server for said firewall application; and

recovering said data by said firewall application from said checkpoint server if there is data available within said checkpoint server for said firewall application.

12. A program storage device, tangibly embodying a program of instructions executable by a machine to perform a method for reconstructing separate but interrelated data, said method comprising:

determining whether there is data available within the checkpoint server; and

recovering, by the firewall application and the at least one application module,  
said data from said checkpoint server if there is data available within said  
checkpoint server.

13. A program storage device, tangibly embodying a program of instructions  
executable by a machine to perform a method for uniquely checkpointing data,  
said method comprising:

creating a unique connection identifier corresponding to each at least one  
connection through the router;

checkpointing data regarding said at least one connection through said router  
within said checkpoint server; and

encoding said checkpointing data within said checkpoint server with said  
corresponding unique connection identifier.

14. The program storage device of claim 13, further comprising the acts of:

recovering said checkpointing data; and

reassembling said checkpointing data according to said unique connection  
identifier.